



OPERATIONAL RISK **MANAGEMENT**

A WAY OF LIFE

**PRESENTED TO FTSC PAC, SIMA SAN
DIEGO, AND SUBASE SAN DIEGO 13-15 JUN 00**



RISK TAKING

**"It seems to be a truth,
inflexible and inexorable,
that he who will not risk
cannot win."**

John Paul Jones



MISHAP



The unplanned result of a behavior which is likely a part of an organization's culture.



MISHAP COST



**5 YEAR
TOTAL:**

**\$4.3
BILLION
&
1045
DEATHS**



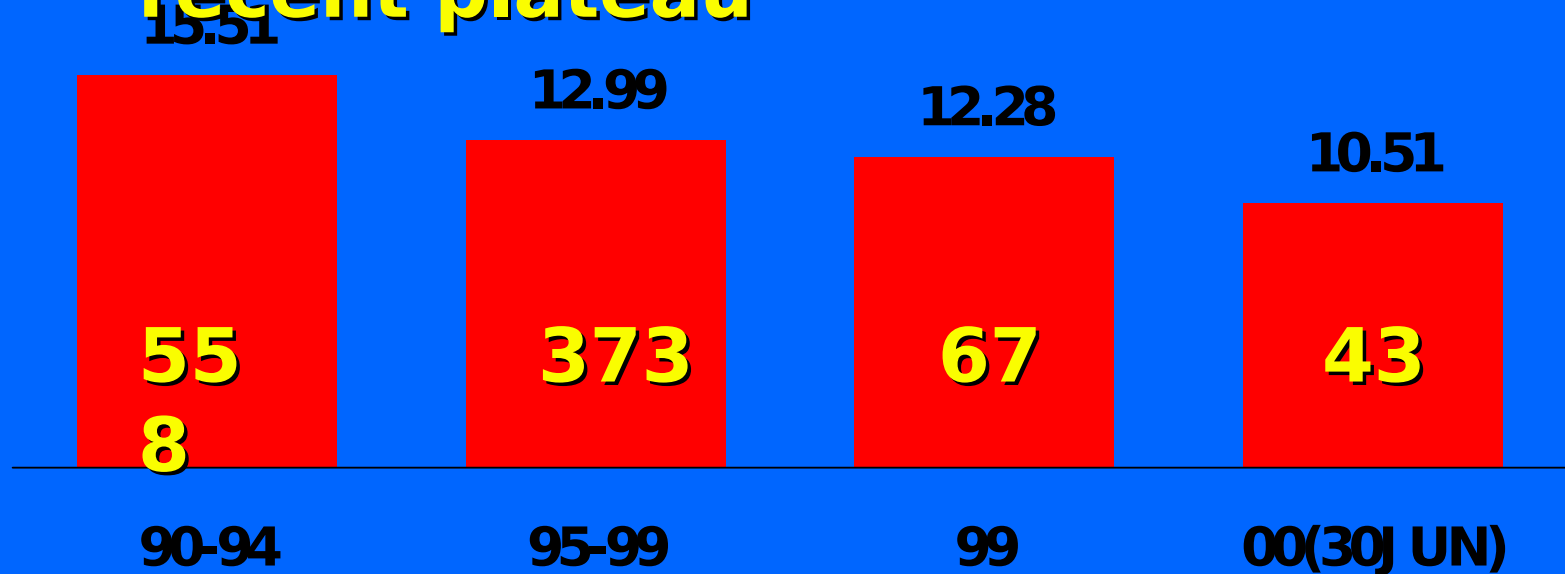
**This shows how big the hole really was
in respect to the size of the ship.**





Navy/Marine Class **A Mishap Rate**

**5 year trends indicate
declining mishap rate, but
recent plateau**



Bars show mishaps per 100,000 people per year. Number in bar is total mishaps.



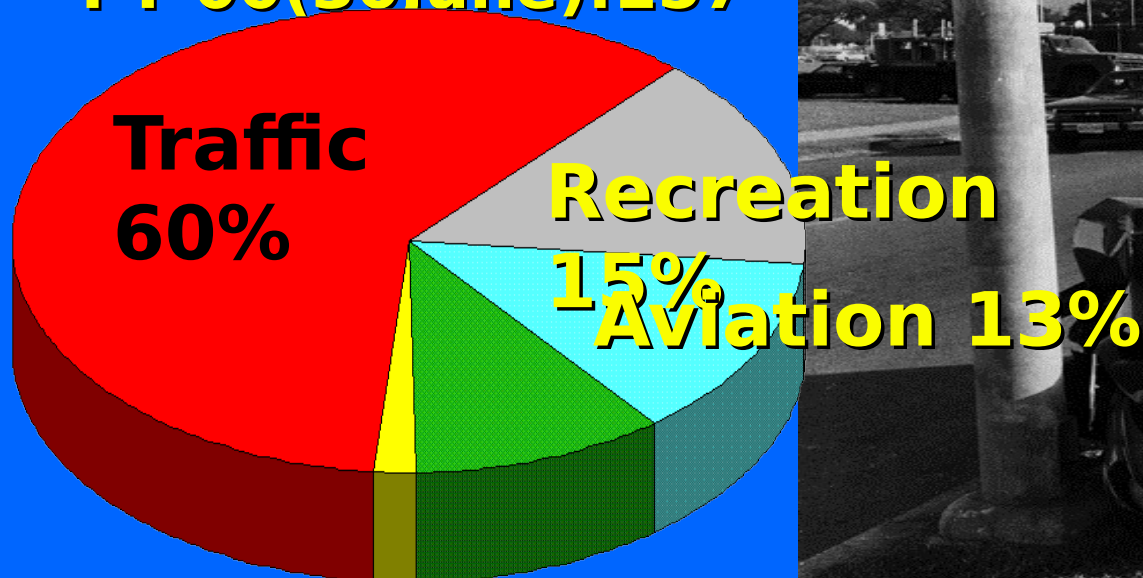
HOW SAILORS & MARINES **DIED IN MISHAPS; FY95-99**

Deaths:

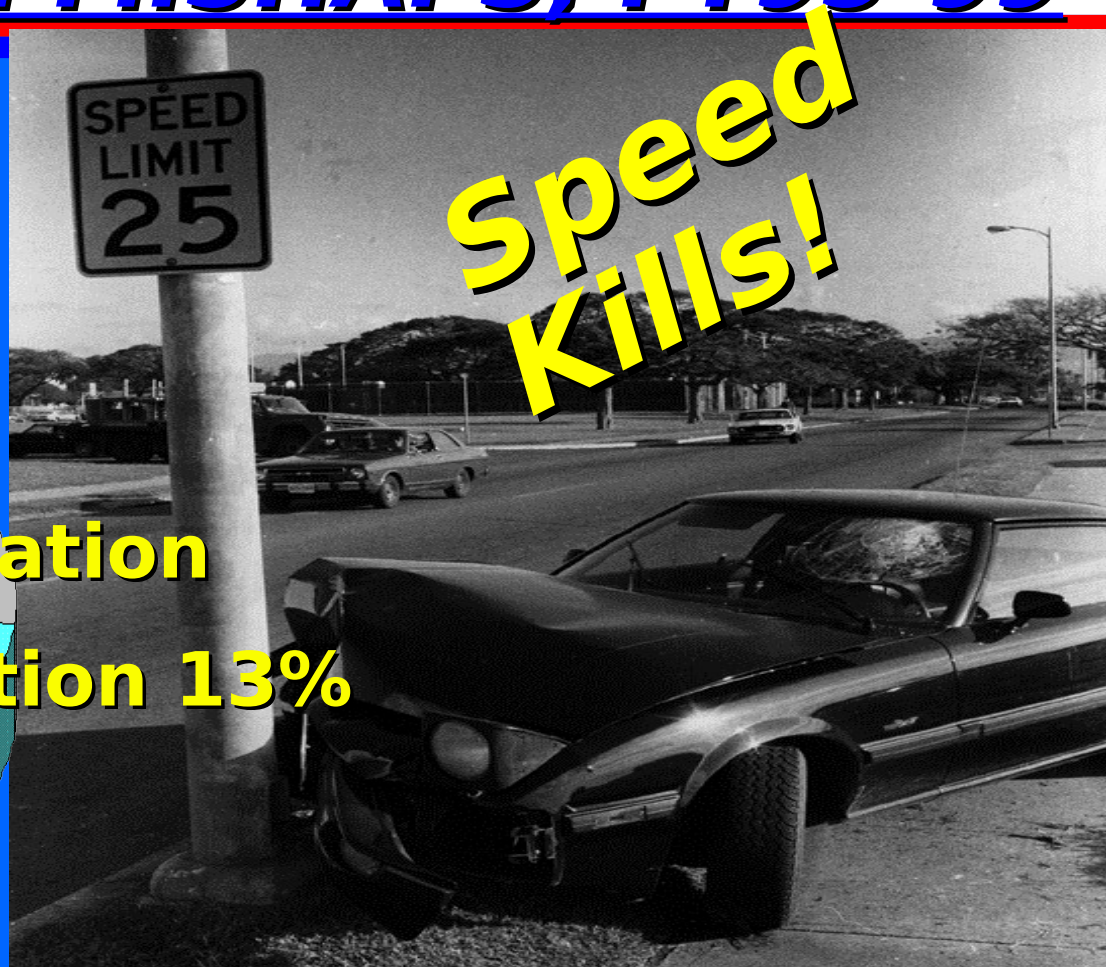
FY 99: 187

FY 95-99: 1045

FY 00(30 June):157



Afloat 2% **Shore/Ground 10%**





FATAL FACTORS IN **TRAFFIC MISHAPS**

**Percentage
of Mishaps**

100

75

50

25

0



360
DEAD!

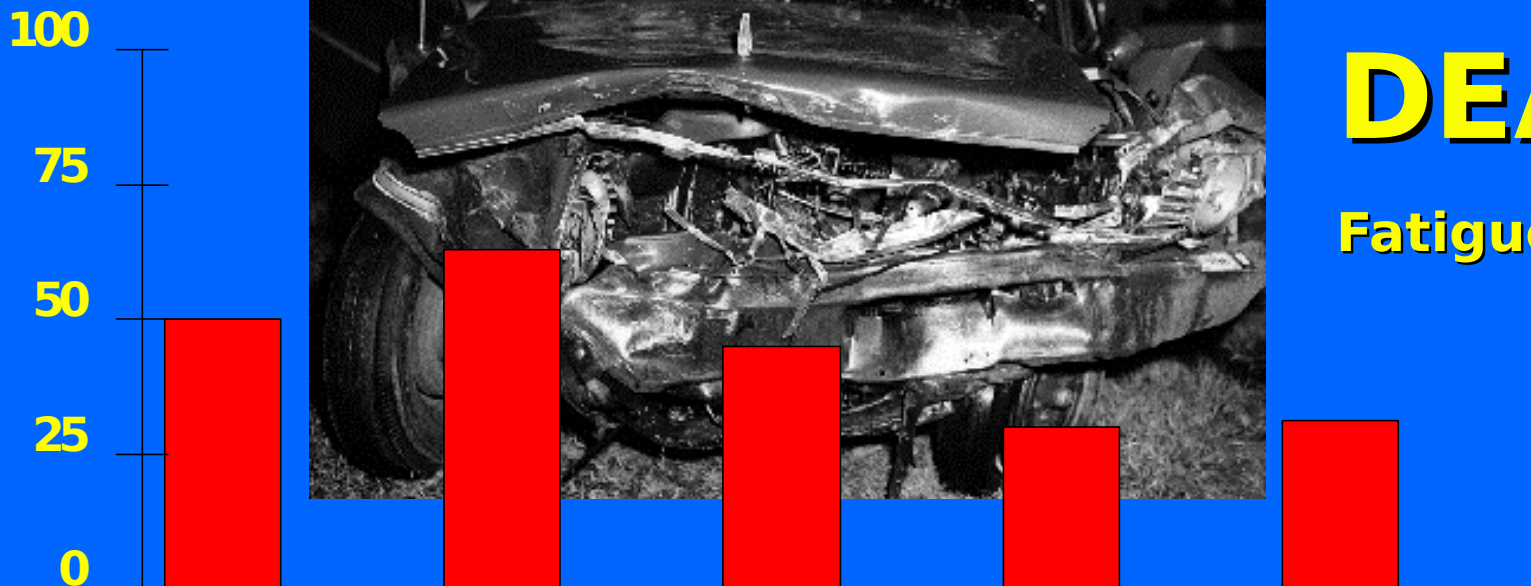
Fatigue: 18%

**Weekend
Speeding**

Night

No Seat Belt

Alcohol





PERSPECTIVE

“In 1968, we lost 99 American Sailors in USS SCORPION, which we think of as a national disaster. While we lost 103 Sailors and Marines in PMV accidents in 1998, and call it our “best year” !”

Robert B. Pirie

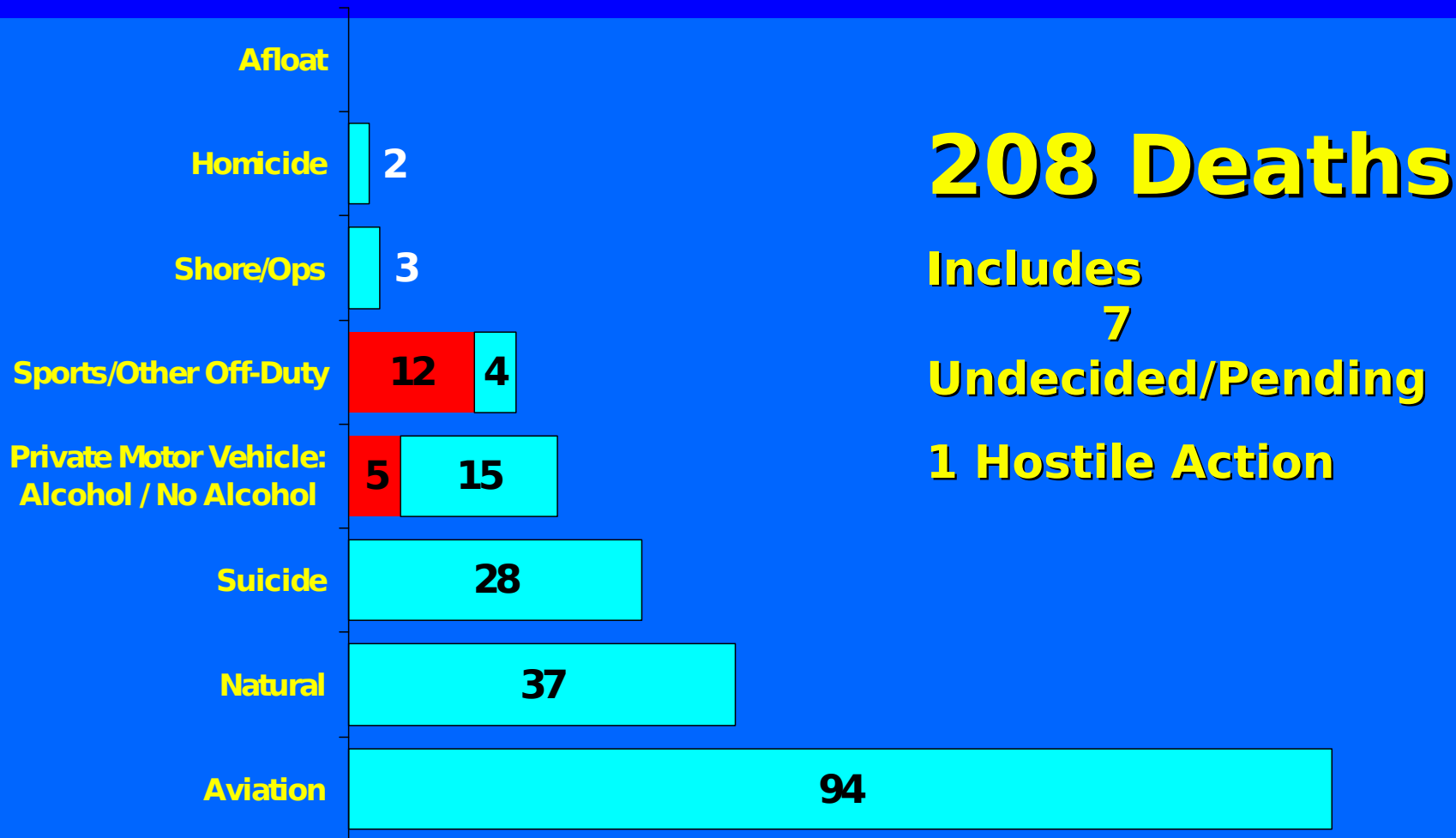
**Assistant Secretary of
the Navy**



CAUSES OF DEATH

Navy & Marine Corps Officers

(FY 95-99)

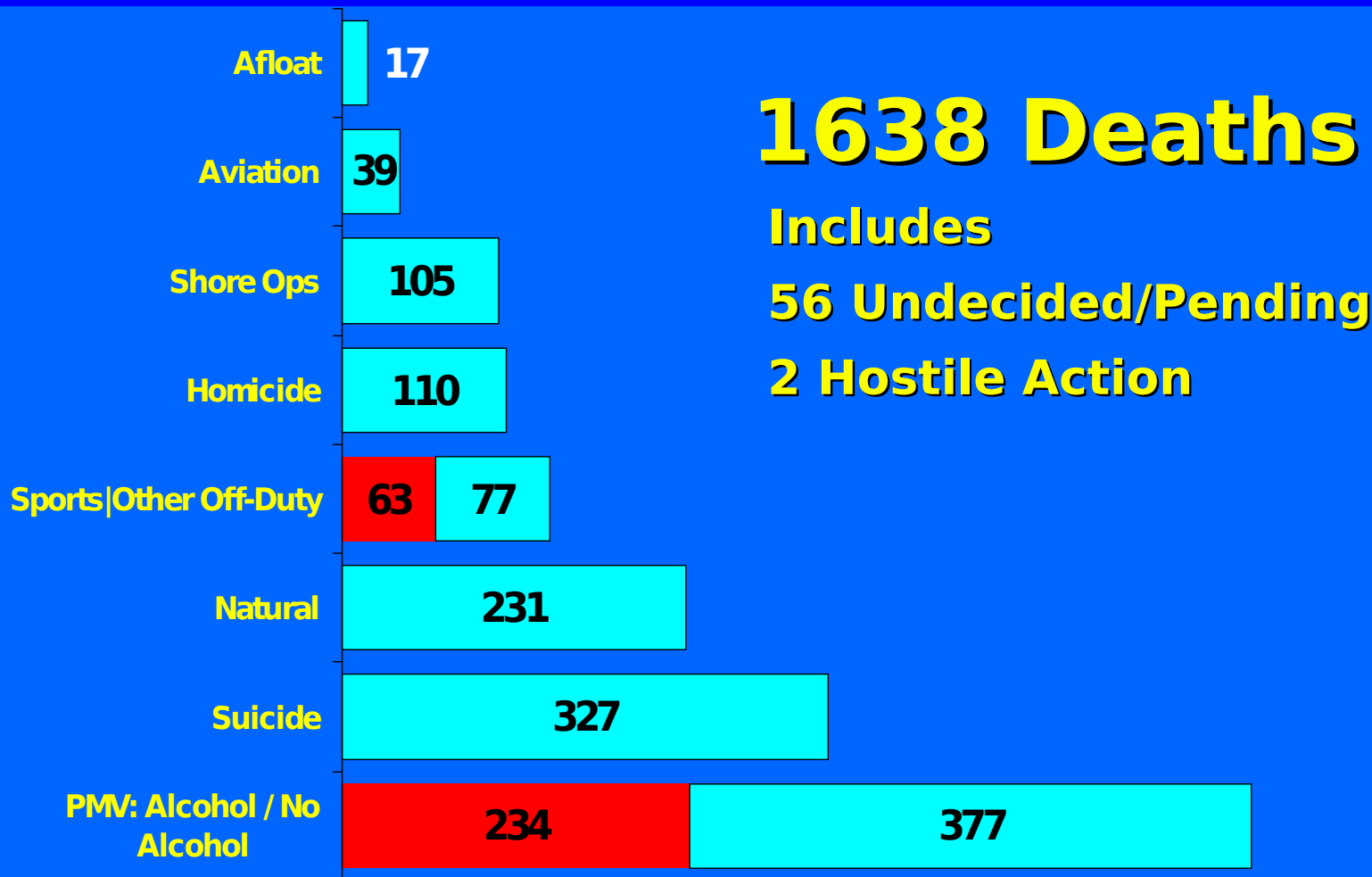




CAUSES OF DEATH

Navy & Marine Corps Enlisted

(FY 95-99)





WHAT ARE YOUR ODDS?

Your probability of dying this year:

Navy Mishap: 1 - 2,748

[1] Off duty mishaps: 1 - 3,649

[4] On duty mishaps: 1 - 11,130

Navy Non-Mishaps: 1 - 3,907

[2] Suicide: 1 - 8,089

[3] Illness: 1 - 10,715

[5] Homicide: 1 - 25,638

Winning the Lottery: 1 - 7,059,052

**You are 19 times more likely to be
killed by lightning!**



THE CHALLENGE

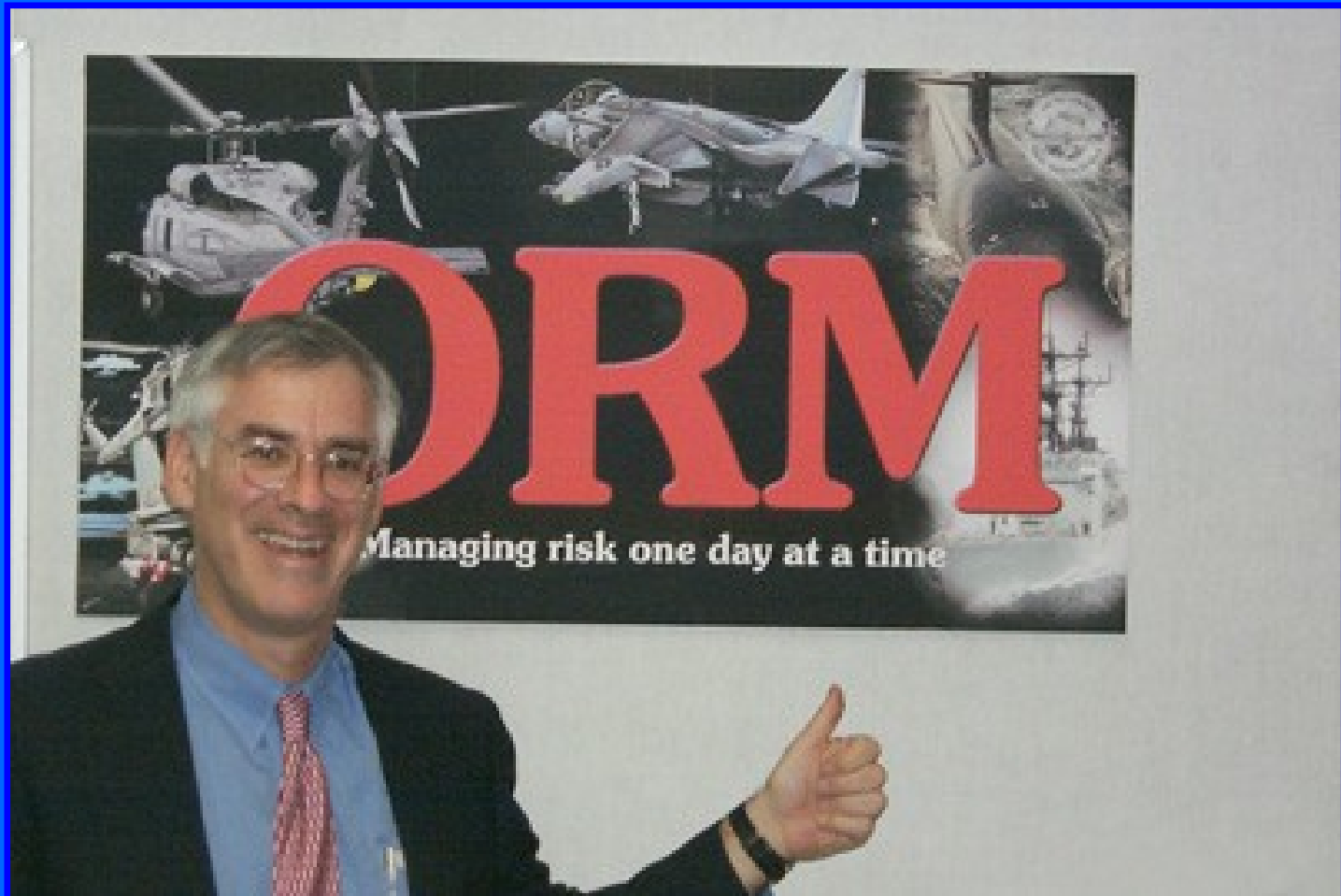
“ I charge each of you with making ORM a core element of Navy life. It will make a positive difference!”

**ADM Jay Johnson, CNO
equipment.”**

ADM Jay Johnson



SECNAV SUPPORT





OPERATIONAL RISK **MANAGEMENT**

What is ORM?

A process to assist you in performing everyday tasks safely and efficiently! Modify the process to fit the situation while still identifying and assessing risks and developing controls to reduce the hazards.



WHAT ORM IS NOT

- **TQL**
- **A safety program, not even a program**
- **Something to prove a specific point**
- **The magical solution to all your problems**



CAUSES OF RISK

Personal Work Ethic
Complex Evolutions
High Energy Levels
CHANGE
New Technology
Feeling of Invincibility
Tempo of Operations

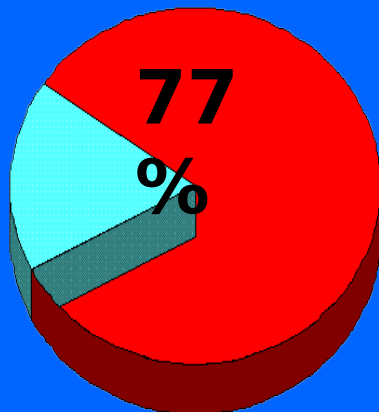
Stress
Constraints
Human Nature
Complacency
Resources

!!

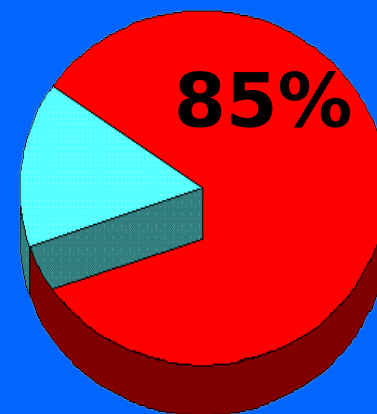


HUMAN ERROR IN MISHAPS, FY 95-99

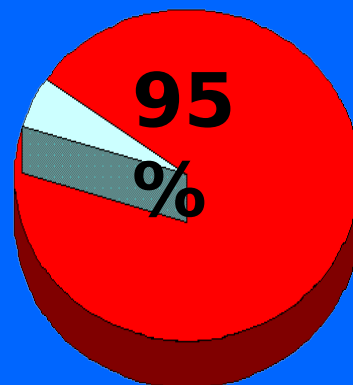
NAVY & MARINE AVIATION CLASS A's



SHIP OPERATIONAL



SHORE OPERATIONAL





HOW ORM COMBATS HUMAN ERROR

- **Focuses on commonly overlooked hazards**
- **Draws on shared experiences**
- **Makes use of lessons learned**
- **Forces realistic analysis of risk**
- **Gives cooler heads a chance to prevail**



WHY ORM NOW?

- **Little progress in reducing risk/mishaps in last 10 years.**
- **Force reductions make every sailor and piece of equipment more critical to mission success.**
- **ORM process proven to be mission supportive.**
- **Moral responsibility to protect our people.**



EQUIPMENT **OFFLOAD**

A PO3 was offloading empty ordnance canisters from a flatbed backed into a congested area. To reach canisters on the opposite side, he drove around the adjacent building. In transit, he maneuvered around equipment, requiring he travel on the side of an embankment. While traveling laterally, down-slope, he lost control of the forklift as it began to slide sideways. He attempted to jump clear, however, the forklift rolled on it's side before he was clear, resulting in blunt trauma injuries and fatal crushing.





BUILDING **RENOVATION**

Remodeling of 2nd floor aerobics room required removal and disposal of old flooring, wallboard and other material. Exit door and wooden stairway egress was enhanced by removal and temporary replacement of stairway landing support post to rail, enabling quick disposal of old material. During smoke break, one maintenance crew member lit up, leaned back and the temporary 2X4" rail, held in place by two sheetrock screws, was dislodged. The worker fell backward from the 12 ft height, landed on his head and died.





MOTOR VEHICLE





CHANGE **OF SEASONS**

October, and Navy Housing occupants experienced first really cold day. Occupants shifted from A/C to heating system. At 0750, wife's co-worker became concerned when she hadn't arrived at work. Co-worker made several unanswered calls and at 0900, drove to the residence. There was no response to knocks despite both cars being in the driveway. At 1200, co-worker called base security, who entered the residence.

- **Maintenance & cleaning of heating unit not conducted iaw manufacturer's instructions.**
- **Material discrepancies associated with the unit's fusible link, air damper and blower time temperature switch.**
- **Thermostat mounting precluded proper operation.**
- **PMS documented complete wasn't.**
- **CO detectors not installed in**



OFF-DUTY **RECREATION**

A Navy Captain, accompanied by a Senior Chief, rented a 22 ft sail boat from MWR. He signed required rental and safety agreements and loaded a cooler with bottled water, beer and sandwiches. Weather was windy with isolated showers and chance of afternoon thunderstorms, seas in the harbor: 1-2 ft, offshore: 2-4 ft. There were no small craft warnings. A 6-8 mile cruise was planned. Required personal floatation devices and other safety





ORM

The process of dealing with risk associated with military operations which includes risk assessment, risk decision making and implementation of risk controls.



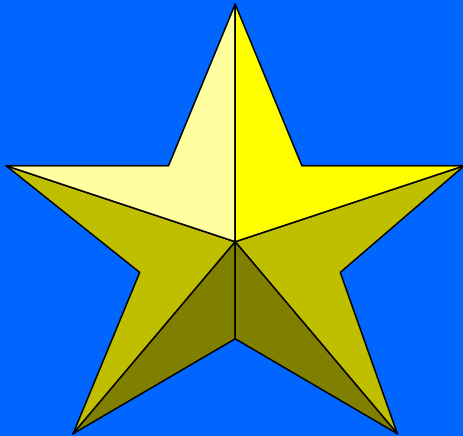
ORM CONCEPTS

- **All are responsible for using ORM**
- **Risk is inherent in all operations**
- **Risk can be controlled**



ELEMENTS OF ORM

- **3 Levels of Application**



- **4 Principles**

- **5 Steps**



3 LEVELS OF APPLICATION

① TIME CRITICAL

90% of ORM processes are “On the run”

□ DELIBERATE

Complete 5 step process

□ IN DEPTH

Other considerations outside
local chain of command



3 LEVELS OF APPLICATION

TIME CRITICAL

DELIBERATE

IN-DEPTH

Little:

- Time
- Complexity



Lot of:

- Time
- Complexity

**ORM is applied
proportionate to operational
complexity, criticality, and
risk!**



4 PRINCIPLES

- ① Accept risk when benefits outweigh cost**
- ② Accept no unnecessary risk**
- ③ Anticipate and manage risk by planning**
- ④ Make risk decisions at correct level**



5 STEPS

- ① Identify hazards**
- ② Assess hazards**
- ③ Make risk decisions**
- ④ Implement controls**
- ⑤ Supervise**



Step #1:

IDENTIFY HAZARDS

- **Analyze manageable pieces of an event**
- **Use experience as a guide**

**“Experience is the name everyone
gives to their mistakes”**

Oscar Wilde, 1892

- **Ask what if, use brainstorming, think
cause and effect**



**Step
#2:**

ASSESS HAZARDS

**Prioritize identified hazards
based on:**

**Severity
&
Probability**



Step #2:

ASSESS HAZARDS

CATEGORY I - The hazard may cause death, loss of facility/asset or result in grave damage to national interests.

CATEGORY II - The hazard may cause severe injury, illness, property damage, damage to national or service interests or degradation to efficient use of assets.

CATEGORY III - The hazard may cause minor injury, illness, property damage, damage to national, service or command interests or degradation to efficient use of assets.

CATEGORY IV - The hazard presents a minimal threat to personnel safety or health, property, national, service or command interests or efficient use of assets.

Risk Assessment Code

1 = Critical
2 = Serious
3 = Moderate
4 = Minor
5 = Negligible

Severity +
Probability
of Occurrence =
RAC

Hazard Probability Categories

- A** - Likely to occur immediately or within a short period of time.
- B** - Probably will occur in time.
- C** - May occur in time.
- D** - Unlikely to occur.

		Probability of Occurrence			
		Likely	Probably	May	Unlikely
		A	B	C	D
S E V E R I T Y	Cat I	1	1	2	3
	Cat II	1	2	3	4
	Cat III	2	3	4	5
	Cat IV	3	4	5	5
		Risk Levels			



Step #3:

MAKE RISK DECISIONS

- **Consider risk control options, most serious risks first**
- **Risk versus benefit**
- **Communicate as required**



Step #4:

IMPLEMENT CONTROLS

- **Engineering Controls**
- **Administrative Controls**
- **Personal Protective Equipment**



Step #5:

SUPERVISE

Same as any other supervisory process:

- **Assure controls are effective and in place**
- **Maintain implementation schedules**
- **Correct ineffective risk controls**
- **Watch for change**



SCENARIO

As a self help project, an EO2, his supervisor, an MMC and a civilian employee are directed to demolish an antiquated 40 ft house trailer. Once reduced to rubble, transport the residue to a nearby refuse area, using available heavy equipment, as required. Note that all roads in the immediate area are soft sand trails.



CAST OF CHARACTERS





Step #1:

IDENTIFY HAZARDS

- **Getting stuck in sand**
- **Physical injury to participants**
- **Striking pedestrians**
- **Damage to handling equipment**
- **Tow chain snapping**
- **Unlicensed/unqualified equipment operator**



Step #2:

ASSESS HAZARDS

Hazards

Severity/Probability

Stuck in sand

Cat IV/B (4)

Physical injury

Cat II/C (3)

Striking pedestrians

Cat II/C (3)

Damage to equipment

Cat III/C (4)

Tow chain snapping

Cat IV/B (4)

Unlicensed operators

Cat III/C (4)



**Step
#3:**

MAKE RISK DECISIONS

- **Physical injury**
- **Striking pedestrians**
- **Damage to equipment**
- **Unlicensed operators**
- **Stuck in sand**
- **Tow chain snapping**



Step #4:

IMPLEMENT CONTROLS

Hazards

Physical injury

Striking pedestrians

Damage to equipment

Unlicensed operators

Stuck in sand

Tow chain snapping

Controls

Use spotter, job planning, pre-brief, good comms

Segregate/identify work area/route, post, restrict

Use spotter, plan job, pre-brief, proper use, comms

Review op quals, including physical prior

Use spotter, plan job and route

Inspect equipment, use equipment for intended purpose, observe limits



LIMITS? **WHAT LIMITS?**





Step #5:

SUPERVISE

- **Ensure adequate job planning, review and approval prior to job conduct**
- **Ensure pre-evolution brief conducted**
- **Ensure the plan is followed**
- **Monitor to ensure effectiveness of controls**
- **Establish and maintain effective communications**
- **Watch for changes**

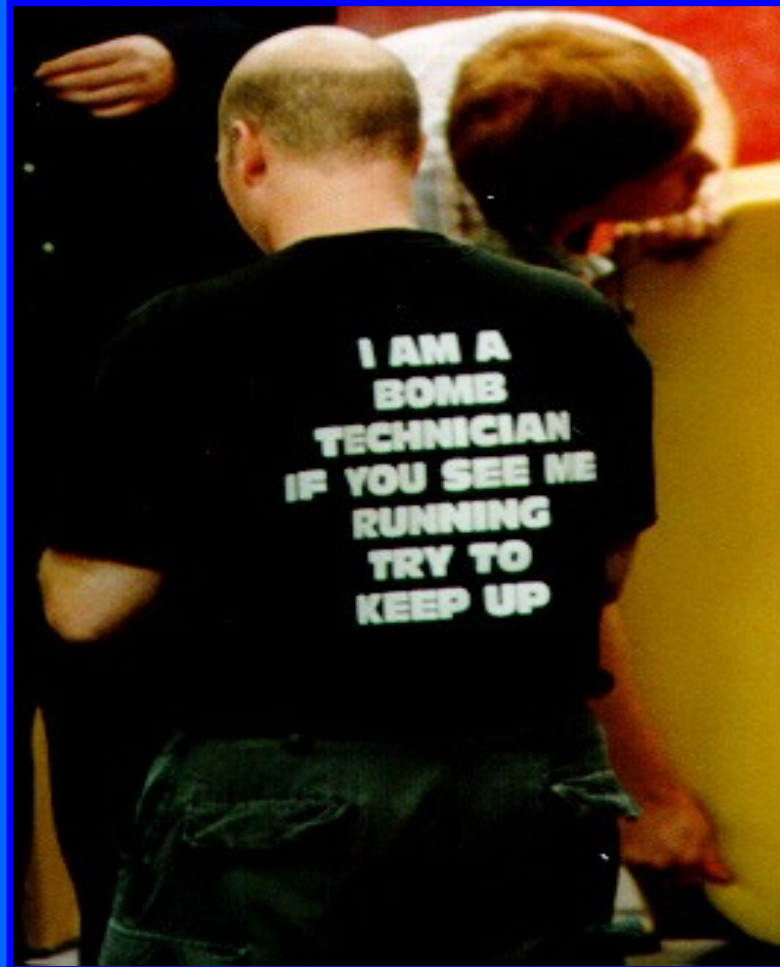


WHAT REALLY HAPPENED?

- **The civilian operator was neither physically qualified, nor licensed to operate the front-end loader.**
- **The E02 was taking hypertension medication causing drowsiness; suffered severe headaches when not taken. No medication taken this day.**
- **The RT forklift had a known brake problem.**
- **Lack of supervision**
- **Improper emergency response**
- **Questionable medical treatment**



WHAT'S A BT?





BENEFITS OF RISK MANAGEMENT

- **Reduction in serious injuries and fatalities**
- **Reduction in material and property damage**
- **Effective mission accomplishment**



REINFORCE GOOD **ORM PRACTICES**

- **Provide Commander's Intent re: acceptable risk and use of ORM.**
- **Benchmark ORM success.**
- **Should ORM fail, identify weak link.**
- **Enforce risk control standards as you would any other essential mission performance standard.**



SUMMARY

ORM is a process ... NOT a program

Decision making tool to:

- Increase ability to make informed choices**
- Reduce risks to acceptable level**

ORM must become an inherent way of doing business



TAKE AWAY

Ask yourself three crucial questions:

- **What can go wrong?**
- **What am I going to do about it?**
- **If I can't do anything, who do I tell?**



YOU'VE GOTTA BE KIDDING?





NAVAL SAFETY CENTER **ORM POCs**

DSN 564-3520

COML (757) 444-3520

FAX (757) 444-6044

Jim Wilder

Ext. 7147

On the web: www.safetycenter.navy.mil